Space Weather Forecast

Issued on Tuesday, 30 May 2023 at 13:07 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of isolated R1/R2 radio blackouts throughout. Slight chance of isolated G1/Minor storm intervals Day 2 onwards.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate over the last 24hrs with Moderate flares recorded at 30/0810UTC and 30/1022UTC respectively, both from a departing region on the southwest limb. There are currently 9 numbered sunspot regions on the visible disc and1 unnumbered region. The largest (AR3315) in the southwest remains complex. The northwest of the disc remains active but spots here saw some simplification. AR3310 the source of recent flare has recently passed beyond the western limb but has been active in recent hours, as recorded above. Two spots recently numbered in the southeast are gradually rotating across the eastern limb. The other numbered regions are relatively small and simple with only small changes in recent hours.

No Earth-directed Coronal Mass Ejections (CMEs) were observed during the period.

Solar Wind / Geomagnetic Activity: Solar winds have remained at generally ambient levels 350-400 km/s. The total interplanetary magnetic field strength has been weak, at or below 6 nT with a slowly rising trend from 29/1800UTC, perhaps as a result of weak CME influence. The important north-south component has weakly fluctuated between +6/-4 nT, but predominantly positive from 29/1800UTC. Geomagnetic activity was Quiet (Kp 0-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to remain Low to Moderate. A chance of isolated Moderate flares and an ongoing slight chance of a Strong flare is maintained through the period.

Solar Wind / Geomagnetic Activity: A Coronal Mass Ejection (CME) that left the Sun on 26 May may give a glancing blow at Earth on Day 2 or 3 (31 May-01 Jun). Fast winds from a coronal hole may influence the Earth into Day 3 or Day 4 (01-02 June).
Solar winds are likely to remain largely at slightly elevated levels, perhaps becoming elevated Days 3-4 (1-2 June). Geomagnetic activity is expected to be mainly Quiet to Unsettled though Day 1 (30 May). A chance of Active intervals from Day 2 (31 May) onwards, with a slight chance G1/Minor Storms.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to be at background levels with solar radiation storms unlikely to occur. However, there is a slight chance of reaching the Minor Storm threshold should any larger flares occur.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	10	20	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	40	40	40	40
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.